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EXAMINER	
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2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/576,006	LEE ET AL.	
	Examiner	Art Unit	
	Munjal Patel	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 August 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6,7,9 and 10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-7,9-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-4, 6-7, 9-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 as amended disclose "the divider has first output and second output, wherein the first output only feeds the divided received and amplified downlink signal through a second feeding line to an input of a first portion, wherein the second output only feeds the divided received". The Examiner is unable to find support for underlined feature that limits it to "only" feeding from first and second output respectively, in originally filed specification (Applicant's suggested page 9 line [3] – page 10 line [2] does not exist, however the description of fig 9 on specification page 5 lines [8-29] fails to disclose above mention feature explicitly). This constitutes new subject matter.

Applicant is required to cancel the new matter in response to this Office Action or provide support for amended feature.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. **Claims 1-4, 6, 7, 9, and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Karabinis (US PAT # 5,937,332)** herein after referred as **Karabinis**, in further view of **Brankovic (US Patent # US 6,198,460 B1)** herein after referred as **Brankovic & Lindenmeier et al.(US 2002/0118138 A1)** herein after referred as **Lindenmeier**.

4. **Regarding claim 1, Karabinis** discloses an apparatus for repeating a downlink signal from a satellite to a mobile station in a shadow area **(Karabinis: Abstract & Fig 2-7, Column 1 lines [17-32] ,[46-60], column 4 lines [61-67], Karabinis discloses repeating a downlink signal)**, the apparatus comprising:

a receiving unit for receiving the downlink signal and amplifying the received downlink signal from the satellite **(Karabinis: Fig 2: 210 & Fig 3: 250 discloses receiving unit with amplifier that amplifies downlink signal received from satellite Fig 2:110)**;

a radiating unit **(Karabinis: Column 5 lines [11])** for radiating the amplified downlink signal to the shadow area **(Karabinis: Column 4 lines [65])**;

and a feeding unit for directly feeding the received and amplified downlink signal from an output of receiving unit through a first feeding line to an input of the radiating means **(Karabinis: Fig 2 & column 5 lines [6-21] describes the process where repeater receives downlink signal, amplifies it and retransmits to the mobile station which provides means for feeding the amplified downlink signal to the radiating means, further Col. 6 lines [10-15] discloses "Although the repeaters**

may include additional circuitry which detects or monitors the uplink signals 180 and/or the downlink signals 170 and performs some function as a result of a characteristic of those signals, there is no processing of the actual uplink signals 180 and the downlink signals 170 themselves" i.e. directly feeding the signal),

wherein the radiating unit comprises:

a dual transmitting antenna **(Karabinis: Fig 6 discloses both the antennas are coupled by a hinge, hence a dual transmitting antenna)** provided with a first micro strip patch array antenna **(Karabinis: Fig 3: 210:185 Col 5 lines [48-54] discloses first antenna)** and a second micro strip patch array antenna **(Karabinis: Fig 3: 290:175 Col 5 lines [64] Col 6 line [8] discloses second antenna)**; and

Where the dual microstrip patch array antenna is used only as a transmitting antenna (This is intended use, intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim **(Karabinis: Col. 8 lines [1—21] disclose antenna radiating downlink signal))**.

and Wherein the radiating divided received and amplified downlink signal received by the mobile station is adjustable from any changes to the shadow area and a direction the mobile station travels **(Karabinis: Fig 6-7, Col. 7 lines [61-63], Col. 8 lines [1—21] disclose antenna radiating downlink signal is adjustable from any changes to the shadow area and direction the mobile travels)**.

However, **Karabinis** fails to explicitly state "symmetrical" dual transmitting antenna & Wherein the dual microstrip patch array antenna is formed to output a signal from each of the first microstrip patch array antenna and the second microstrip patch array antenna in an asymmetrical or symmetrical radiation pattern, for only radiating the divided received and amplified downlink signal being received by the mobile station in the shadow area.

5. **In** a similar field of endeavor, **Brankovic** discloses Flat antenna for mobile satellite communication. In addition **Brankovic** disclose "symmetrical" dual transmitting antenna & Wherein the dual microstrip patch array antenna is formed to output a signal from each of the first microstrip patch array antenna and the second microstrip patch array antenna in an asymmetrical or symmetrical radiation pattern, for only radiating the divided received and amplified downlink signal being received by the mobile station in the shadow area **(Brankovic: Fig 4- 6 , Col. 5 lines [9-23] discloses both the antennas are can be set to variable angle position with respect to divider and at 45 degree angle it will become symmetrical and for the rest of angles it is asymmetrical radiation pattern)**.

6. **Therefore,** it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate **Brankovic** into the system of **Karabinis** by specifically providing **"symmetrical"** dual antenna, for the purpose of receiving & transmitting proper signal.

7. **Karabinis** in view of **Brankovic** only discloses **(Karabinis: Col 3 lines [27-30])** antenna isolation, hence a divider that isolates downlink signals between two antennas,

However, Karabinis in view of **Brankovic** fails to disclose explicitly a divider having an input for attaching the first feeding line, wherein the divider divides the received and amplified downlink signal and wherein the divider has first output and second output, wherein the first output only feeds the divided received and amplified downlink signal through a second feeding line to an input of a first portion, wherein the second output only feeds the divided received and amplified downlink signal through a third feeding line to an input of a second portion, and passing only the divided received and amplified downlink signal of the first portion to the first micro strip patch array antenna and passing only the divided received and amplified downlink signal of the second portion to the second micro strip patch array antenna.

8. **In a** similar field of endeavor, **Lindenmeier** discloses flat antenna for mobile satellite communication. In addition **Lindenmeier** discloses a divider having an input for attaching the first feeding line, wherein the divider divides the received and amplified downlink signal and wherein the divider has first output and second output, wherein the first output only feeds the divided received and amplified downlink signal through a second feeding line to an input of a first portion, wherein the second output only feeds the divided received and amplified downlink signal through a third feeding line to an input of a second portion, and passing only the divided received and amplified downlink signal of the first portion to the first micro strip patch array antenna and passing only the divided received and amplified downlink signal of the second portion to the second micro strip patch array antenna **(Lindenmeier: Fig 4b – Fig 4c & ¶ 0052 discloses two separate lines feeding each sides of antenna, i.e. dividing the input signal**

and splitting the signal into two where one is fed to first direction and other is on opposite direction only as disclosed in figure).

9. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the well known teachings of **Lindenmeier** into the system of **Karabinis** in view of **Brankovic,** for the purpose of ensuring adjustable ratio of antenna gain in low elevation region **(Lindenmeier: ¶ 0004).**

10. **Regarding claim 2, Karabinis** in view of **Brankovic & Lindenmeier** discloses the apparatus of claim 1, wherein the receiving unit comprises:
a micro-strip patch array antenna **(Karabinis: Fig 2: 210 is patch array antenna i.e. micro strip patch array antenna)** for receiving the signal from the satellite; and
an amplifier for amplifying the received signal **(Karabinis: Fig 3:250 & 280)** from the micro-strip patch array antenna **(Karabinis: Fig 2: 210).** This claim is rejected for the same motivation as claim 1.

11. **Regarding claim 3, Karabinis** in view of **Brankovic & Lindenmeier** discloses the apparatus of claim 2, wherein the radiating unit is installed in the shadow area **(Karabinis: Column 4 lines [65])**. This claim is rejected for the same motivation as claim 2.

12. **Regarding claim 4, Karabinis** in view of **Brankovic & Lindenmeier** discloses the apparatus of claim 2, wherein the micro-strip patch array antenna **(Karabinis: Fig 2:**

210) and the amplifier **(Karabinis: Fig 3:250 & 280)** are implemented as one piece **(Karabinis: Fig 2 & 3)** and further comprises a probe **(Karabinis: Fig 3: connecting probe is between 170 to 250 & 280)** for transiting the signal received from the micro-strip patch array antenna to the amplifier. This claim is rejected for the same motivation as claim 2.

13. **Regarding claim 7, Karabinis** in view of **Brankovic & Lindenmeier** discloses the apparatus of claim 1, wherein the receiving unit is located at a position where a line of sight to the satellite **(Karabinis: Fig 2:110 & 210 are in line of sight)** is secured. This claim is rejected for the same motivation as claim 1.

14. **Regarding claim 6 & 9, Karabinis** in view of **Brankovic & Lindenmeier** discloses everything in claim 1, as above, however **Karabinis** in view of **Brankovic & Lindenmeier** fails to disclose apparatus's intended use specifically as shadow area being overpass or underpass. **However, the examiner** maintains that it was well known in the art at the time of invention to interpret shadow area as underpass or overpass.

Karabinis describes shadow area as signals into buildings, foliage, transportation vehicles, and other objects which can reduce link margin **(Karabinis: column 2 lines [6—65])**, it is obvious to one ordinary in the art to interpret it as underpass or overpass as in both situation it reduces link margin of the apparatus disclosed. This claim is rejected for the same motivation as claim 1.

15. **Regarding claim 10, Karabinis** in view of **Brankovic & Lindenmeier** discloses the apparatus of claim 1, wherein the first micro strip patch array antenna and the second micro strip patch array antenna are coupled by a hinge **(Karabinis: Col 8 lines [1-17] discloses Flap or cover attached with a hinge between first and second antenna and as further shown in fig 6 both the antennas are coupled by a hinge)** to tilt a radiation angle of the symmetrical dual transmitting antenna **(Karabinis: Fig 6 discloses both the antennas are coupled by a hinge & hence at certain angle position it becomes symmetrical, hence a symmetrical dual transmitting antenna)**. This claim is rejected for the same motivation as claim 1.

Response to Arguments

16. Applicant's arguments filed on 08/30/2010 have been fully considered but they are moot due to amendment to the claims.

a. Applicant's arguments on page 7 ¶ 0002 regarding 35 U.S.C. 112 2nd paragraph is withdrawn in view of amendment.

b. Applicant's arguments on page 7 ¶ 0003 – page 12 ¶ 0003 regarding amended feature is moot due to amendment to the claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Munjal Patel whose telephone number is (571)270-5541. The examiner can normally be reached on Monday - Friday 9:00 AM - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on 571-272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Munjal Patel
Examiner
Art Unit 2617

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